



CITY ENGINEER'S OFFICE
51 EAST MARKET STREET
PHONE: (419) 448-5425
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City of Tiffin – Sidewalk Specifications

General Notes

- 1) All sidewalks shall comply with ODOT Specification 608, except as noted within these specifications.
- 2) All sidewalks shall be a minimum of 4' in width, have contraction joints, and shall be constructed through all driveways. (See Attached Detail Drawings)
- 3) Concrete shall be a minimum of six (6) bags of cement (ODOT Class C), placed on a minimum of 2 inches of well compacted aggregate base, unless otherwise approved by the City Engineer. (See Detailed Specifications)
- 4) The City may approve sidewalks from materials other than concrete as follows: Sidewalks may be made from paving bricks set in cement mortar setting bed upon a Portland cement foundation, or paving bricks set in a sand bed upon a compacted soil base. Asphalt walks upon a sufficient base are only permitted within 20 feet of a railroad crossing. Sidewalks of these surfaces must, also, meet the required minimum width of 4 feet.
- 5) The aggregate base shall be brought to an even surface uniformly below the proposed surface of the finished walk and shall be as wide, or wider than the sidewalk. Soft or spongy base or organic matter shall be removed and replaced with compacted stone. Wherever a fill is necessary, the material used shall be stone and it shall be spread in lifts not to exceed 4 inches maximum with each layer being compacted.
- 6) Substantial side forms with sufficient strength to prevent springing shall be accurately placed to line and grade and shall not be removed until sufficient time has been allowed for the concrete to properly cure. Forms may be either wood or metal and must extend the full depth of slab.
- 7) Concrete shall be placed in one course to at least the full minimum thickness required and screeded to bring the top to a smooth even surface.
- 8) The surface shall have a light broom or burlap finish.
- 9) Finished concrete shall be kept moist for 48 hours or sealed by spraying a manufactured curing membrane uniformly over all exposed surfaces. Sealing shall be performed immediately after the finishing work is completed and all free standing water has disappeared.
- 10) Sprinkling of dry cement on the floated surface to hasten drying is prohibited.
- 11) Cold weather installation shall meet the requirements of ODOT Item 511.12 or 499.02.
- 12) Hot weather placement will require special precaution to prevent rapid slump loss, shrinkage, or crazing. Addition of water to the mix may not be permitted, and it may be necessary to cover the concrete to protect from extreme heating from direct sunlight.
- 13) 1/2 inch thick Expansion Joint Filler, extending the full depth of the walk, shall be placed between the walk and any fixed structure including existing concrete driveways and existing walks and curbs.



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- 14) Contraction Joints shall be placed at no more than 5' intervals and as nearly as possible to ascertain property lines. They shall be a minimum of 1/8 inch wide and 1/4 the thickness of the slab. Joints shall be sawed as soon as no raveling occurs or sawing does not damage the concrete, preferably within 12 hours after concrete has been placed, and not longer than 24 hours.
- 15) The contractor is responsible for supplying grade and line stakes for sidewalks within the public right of way if needed.
- 16) When sidewalks are placed against the back of curb, the minimum width shall be increased by a minimum of 2 feet.
- 17) All curbs and sidewalks shall be constructed in a manner so as to have the least impact on surrounding city-owned trees. When roots must be cut, the City Engineer and/or the City Forester will examine the affected tree(s) and determine if removal is appropriate.
- 18) All surplus material shall be removed from the excavated sidewalk area. Materials are not to be placed onto adjacent property without written permission from the property owner. Refuse materials from the sidewalk work shall be removed lot by lot, upon completion of the work.
- 19) The contractor is responsible for arranging all necessary utility locates by contacting OUPS at 811 or 1-800-362-2764. Utility locates shall be scheduled well in advance of but not less than 2 working days prior to construction.
- 20) A Street Cut Permit and Bond is required to be obtained through the City of Tiffin Engineer's Office, prior to any work being performed on any sidewalk/curb within the City of Tiffin Right of Way. The City Engineer will determine the alignment of all newly constructed sidewalks.
- 21) Contractors may request, at their option, inspections of the forms by the City Engineer, prior to pouring. Please give 48 hours notice for these inspections. Final inspections will be performed even if the forms had prior inspection, and if it is found that the sidewalks do not meet the City of Tiffin's Sidewalk Specifications found in this document, the City may require removal and/or correction at the contractor's expense. The City, also, reserves the right, at its expense, to randomly test core drill any sidewalk installation. The installer will repair the core test hole at his or her expense.



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Sidewalk Repair General Notes

The following sidewalk conditions shall be considered outside the required sidewalk specifications and must be repaired:

- 1) Sidewalks with excessive or reverse cross slope greater than 2% (1/4"/FT).
- 2) Sidewalks with longitudinal slope greater than 8% (1"/FT).
- 3) Sidewalks having joint differentials at any point between slabs greater than 1/2 inch.
 - a. Joint Differentials 1/2 - 1 inch may be repaired by grinding, replacement, or mud jacking.
 - b. Joint Differentials greater than 1 inch must be repaired by either replacement or mud jacking.
- 4) Sidewalks slabs with multiple cracks, with cracks open 1/2 inch or greater, or with cracks with 1/4 inch vertical displacement must be replaced.
- 5) Sidewalks slabs with holes greater than 1 square foot must be replaced.
- 6) Sidewalks slabs with displacement due to tree roots shall be removed and the base shall be excavated to a depth of 1 foot below the sidewalk base. All tree roots within this 1 foot area shall be removed.
 - a. Upon removal of slabs damaged as a result of a city owned tree, please notify the City Engineer's Office for an inspection.
 - b. The City Engineer and/or City Forester shall consider the tree for removal
- 7) Sidewalks may be rerouted around trees only if there is prior approval from the City Engineer.
- 8) Any utility valve within a sidewalk shall either be relocated or made flush with the surface of the new sidewalk and it is the contractor's responsibility to make these arrangements with the appropriate utility company.
- 9) If the sidewalk is replaced across the entire frontage of a property, excluding driveways, sidewalks with widths greater than 4 feet may be replaced with a 4 feet wide walk.
 - a. Transitions from 4 feet wide walks to walks wider than 4 feet must be done as shown on the Attached Detail Drawing unless otherwise approved by the City Engineer's Office.
- 10) Sandstone Sidewalk Slabs may be repaired upon a sufficient base when approved by the City Administrator or shown to have historical significance.

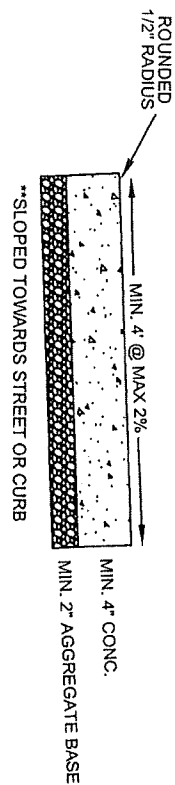


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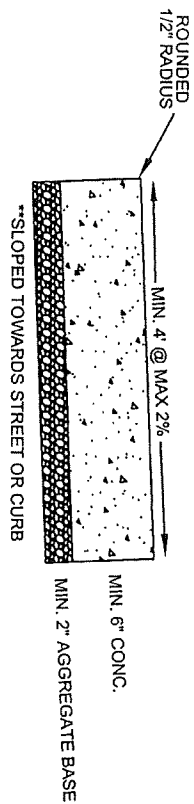


Detailed Sidewalk Specifications

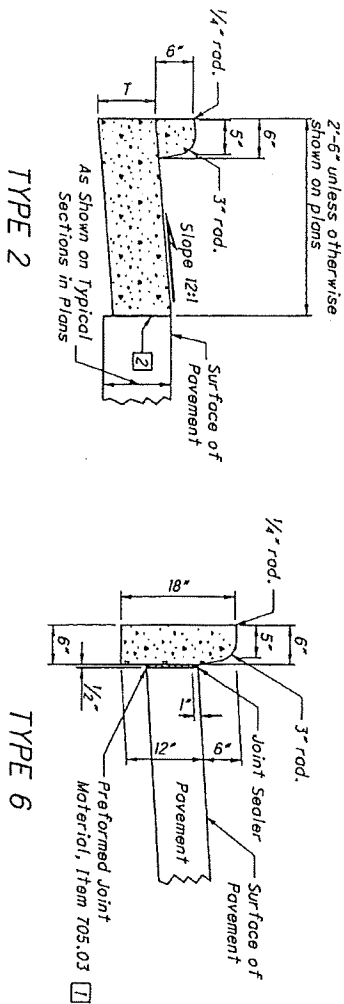
- **Concrete**
Shall be ODOT class C, 4000 PSI at 28 days with 7% (plus or minus 1.5%) air entrapment, minimum 6 sacks of cement per cubic yard, and a maximum water/cement ratio of 0.50. Maximum slump shall be 4" and in conformance with ASTM C94 and related designs. 4" slump may be exceeded only by the use of high range water reducer
- **Course Aggregate**
Shall be #57 lime stone or natural stone
- **Fine Aggregate**
Shall be sand manufactured from limestone and conform to ODOT 703.02 and ASTM C33
- **Portland Cement**
Shall be Type I and conform to ASTM C150
- **Admixtures**
Air Entrapment, ASTM C260 and high range water reducer ASTM C294 are permitted. No other admixtures, including fly ash and raw or calcined natural pozzolans, are permitted without written authorization from the Engineer.
- **Slump Testing**
Shall be performed by the contractor in the presence of, and at intervals requested by the Engineer or his representative on the job
- **Excavation**
Shall be an average of one inch deeper than the slab to permit leveling of the sub grade with #411 crushed aggregate, which shall be compacted and thoroughly wetted prior to placement of concrete
- **Steel Reinforcement**
If required and with authorization from the Engineer, #4 bars shall be used at 10" c/c maximum, in both directions. Steel shall be at 2" from the bottom of the slab.



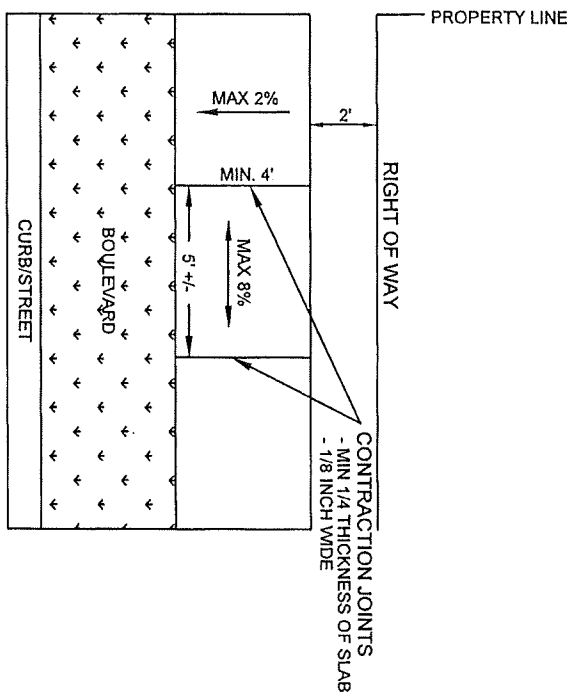
Typical Section Concrete Sidewalk



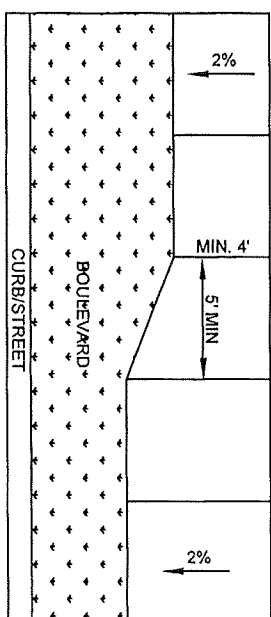
**Typical Section Concrete Sidewalk
Through A Driveway**



Typical Curb Sections

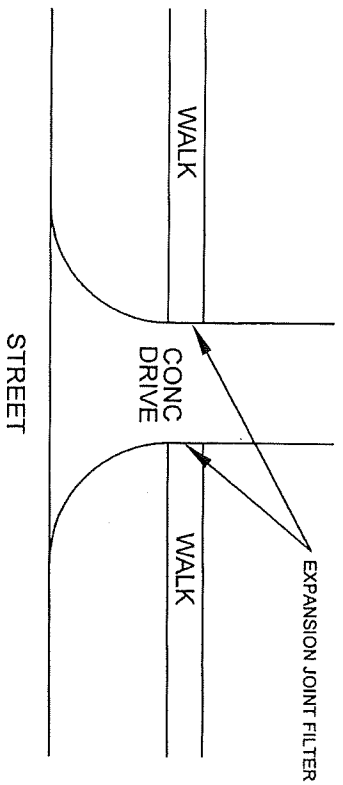


Typical Concrete Sidewalk Plan

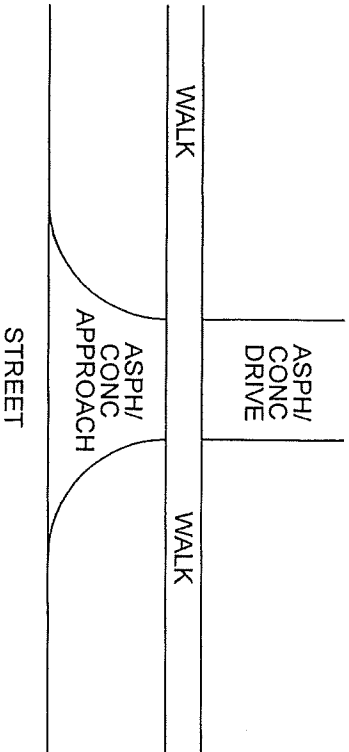


Typical Concrete Sidewalk Transition Plan

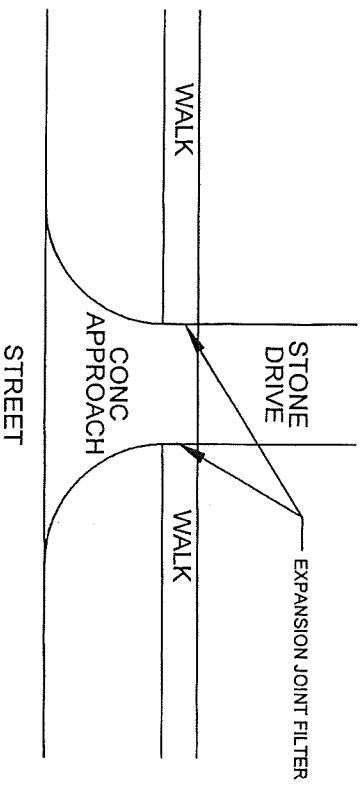
OPTION A



OPTION B



OPTION C



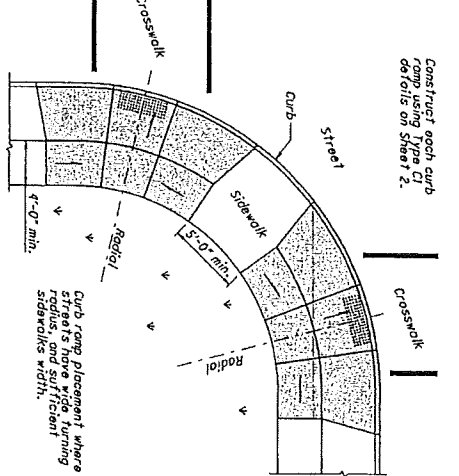
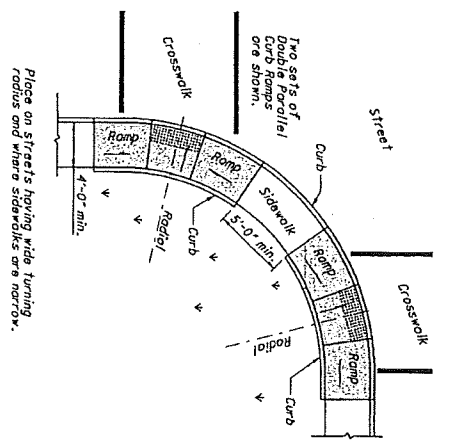
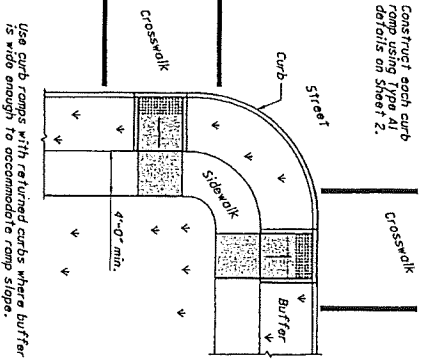
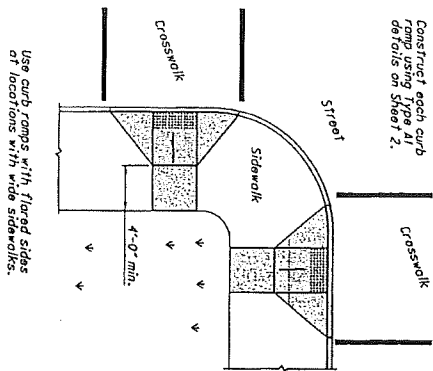
SIDEWALKS THROUGH DRIVES

****NOTE: ALL SIDEWALKS THROUGH DRIVES AND ALL DRIVE APPROACHES BEING USED FOR SIDEWALKS MUST MEET ALL APPLICABLE SIDEWALK REQUIREMENTS, AND HAVE A MINIMUM THICKNESS OF 6 INCHES.**

REVISED: 10/5/2015

CITY OF Tiffin
ENGINEERING DEPARTMENT
51 E. MARKET STREET
Tiffin, Ohio 44883

Construct each curb ramp using Type A1 details on Sheet 2.



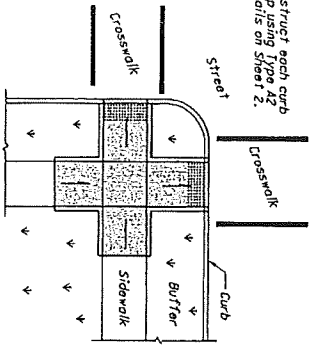
PERPENDICULAR CURB RAMPS

PREFERRED CONSTRUCTION PLACEMENT

PARALLEL CURB RAMPS

COMBINATION CURB RAMPS

Construct each curb ramp using Type A2 details on Sheet 2.



NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

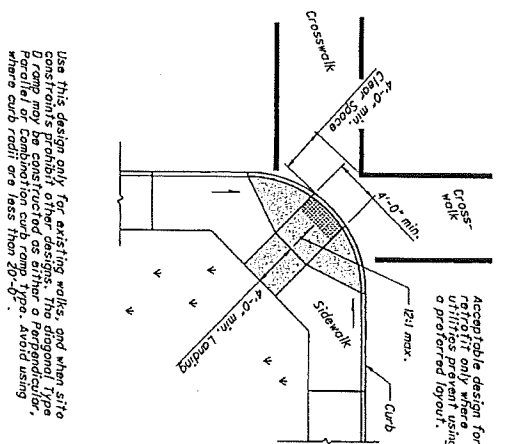
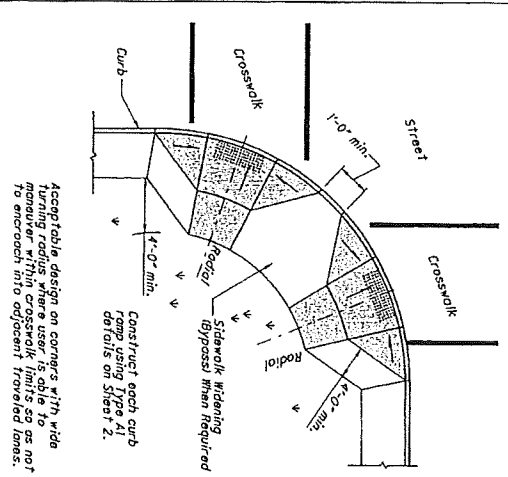
Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to ensure that the design meets the needs of the user. The placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Work beyond the shaded ramp/landing area is paid for as curb (609) and walk (603). Removal of existing curb, work for existing curb ramps are paid under Item 202.

For off-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the ramp area within the shaded limits of this drawing as detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Item 608 Curb Ramp, Square Foot. This includes the cost of any curb or curb and walk for, require removal of existing pavement Item 202 to the nearest joint, or if no joint exists, a minimum of 4 feet.

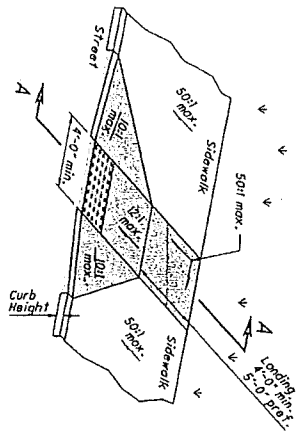


PERPENDICULAR RAMPS

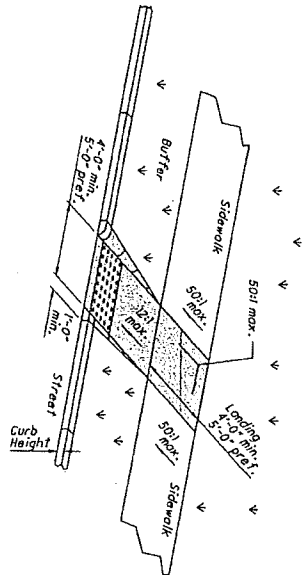
DIAGONAL RAMP (Type D)

ACCEPTABLE CONSTRUCTION PLACEMENT

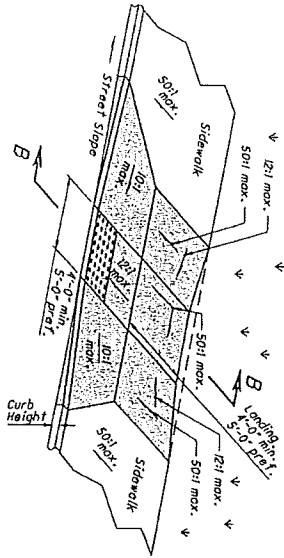
REVISED: 10/5/2015



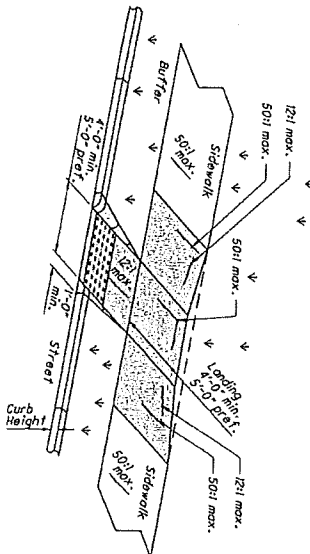
Type A1 (Perpendicular with flared sides)
PERPENDICULAR CURB RAMP DETAILS



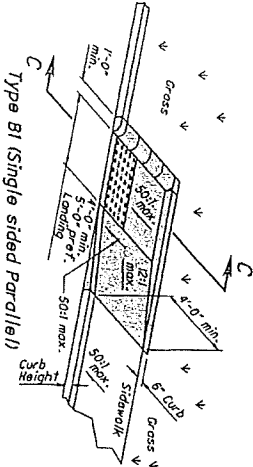
Type A2 (Perpendicular with returned curb)



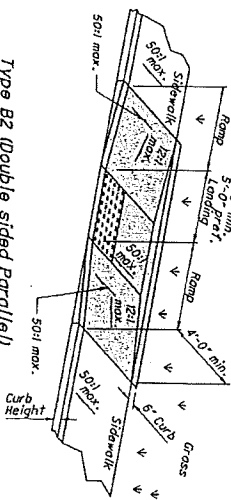
Type C1 (Combined with flared sides)
COMBINED CURB RAMP DETAILS



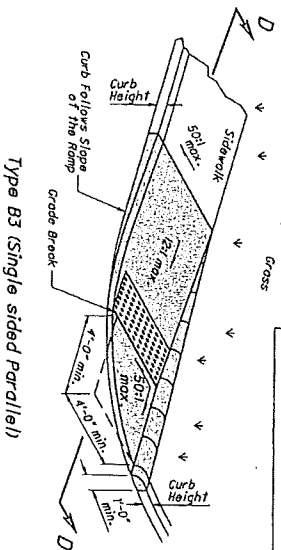
Type C2 (Combined with returned curb)



Type B1 (Single sided Parallel)
PARALLEL CURB RAMP DETAILS



Type B2 (Double sided Parallel)



Type B3 (Single sided Parallel)

NOTES CONTINUED

The running slope of the ramp is prepared to be 12:1 or flatter. In existing conditions where the maximum ramp slope is 12:1 or flatter, it may be reduced as follows:

- A) 10:1 for a max. rise of 6";
 - B) 8:1 for a max. rise of 3";
 - C) 6:1 for a max. rise of 1.5";
- Historic cross streets or a flatter slope is not feasible. To prevent closing the grade indefinitely, the transition from existing sidewalk to the shaded curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the crosswalk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing. The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush. Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope.

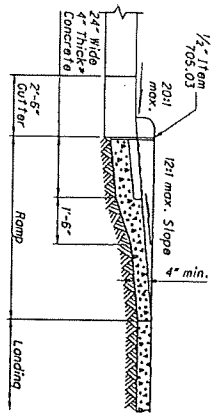
DETECTABLE WARNING: Install Detectable warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp slopes for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/4" between the 11 pavement and gutter, and 21 gutter and ramp, are not allowed.

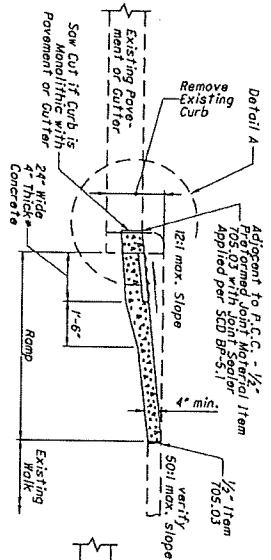
SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" item 705.03 expansion joint filler around the edge of ramps built in concrete. Expansion joints shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

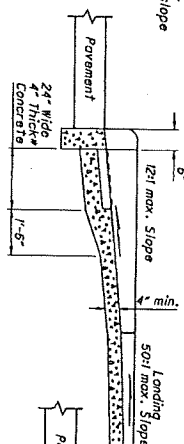
See Sheet 3 for Sections.



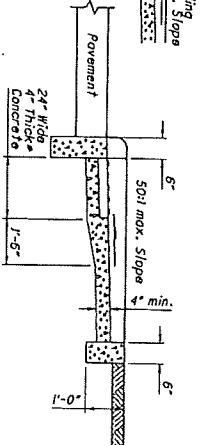
SECTION A-A
NORMAL DETAIL
See Sheet 2.



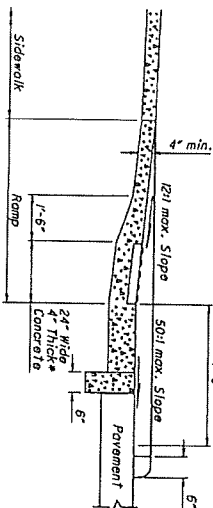
SECTION A-A
EXISTING WALK DETAIL
See Sheet 2.



SECTION B-B
See Sheet 2.



SECTION C-C
See Sheet 2.



SECTION D-D
See Sheet 2.
*Where possible, pour ramp area integral with the curb, otherwise use 6\"/>

DETECTABLE WARNING NOTES

GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert persons with visual impairments of their approach to streets and hazardous drop-offs.

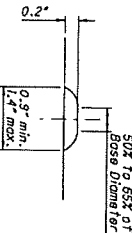
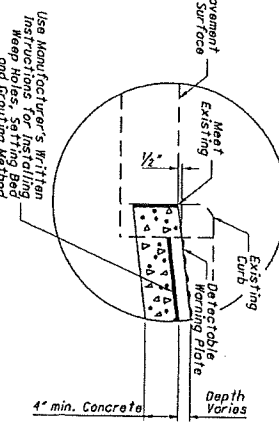
PLACEMENT: Detectable warnings are to be installed at any location where persons might cross paths with vehicular traffic lanes, such as the intersection of a street and a driveway, or at the edge of a ramp. Typical street corner placement locations are shown on Sheet 1.

The depth of concrete underneath detectable warning products shall be a minimum of 4\"/>

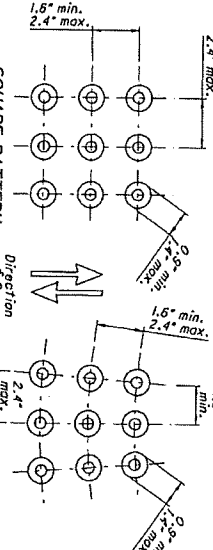
ALIGNMENT: Truncated domes should be aligned with the primary direction of travel as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally, truncated domes should be installed with the back of the curb, but for skewed alignments, the alignment detail may have to be mirrored and placed segmentally.

PRODUCTS & COLORS: Color of the detectable warnings should contrast with surrounding concrete, walk and ramp. Black is not the color of the approved products, and guidance on color may be found on the Office of Roadway Engineering Services' Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.

DETAIL A

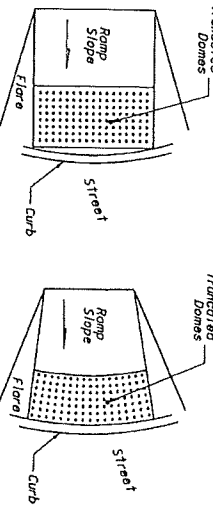
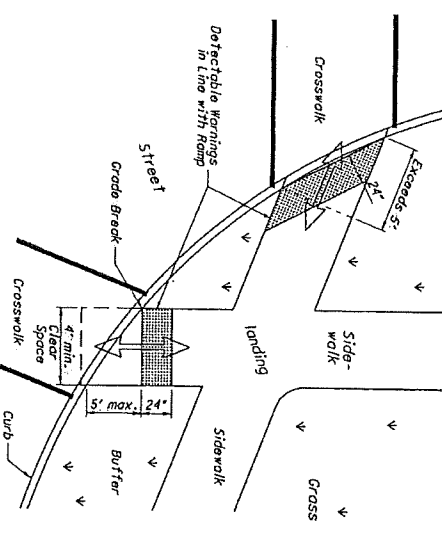


HEIGHT AND DIAMETER



SQUARE PATTERN
PARALLEL ALIGNMENT
RADIAL ALIGNMENT
TRUNCATED DOMES DETAILS

DETECTABLE WARNING ALIGNMENT



DOMES ALIGNMENT ON RADIUSED CURB